

=&gt; d his

(FILE 'HOME' ENTERED AT 16:27:57 ON 10 OCT 2001)

FILE 'CASREACT' ENTERED AT 16:28:54 ON 10 OCT 2001

L1 STR  
 L2 0 S L1  
 L3 QUE LACTONE/FG.FORM (L) CARBOXYLIC/FG.RXN  
 L4 4294 S L3  
 L5 0 S L1 SSS SAM SUB=L4  
 L6 0 S L1 SSS FUL SUB=L4  
 L7 4 S L4 AND (?CELLULOS? OR ?SACHARID? OR ?DEXTRAN? OR ?STARCH?) *cas react - no rxn's*  
*none are relevant*

FILE 'REGISTRY' ENTERED AT 16:44:45 ON 10 OCT 2001

L8 STR L1  
 L9 1 S L8  
 L10 STR L1  
 L11 0 S L10  
 L12 STR L8  
 L13 0 S L12  
 L14 STR L13  
 L15 0 S L14  
 L16 27 S L14 FUL *← 27 cpds for STR search*

FILE 'HCAPLUS' ENTERED AT 16:51:35 ON 10 OCT 2001

L17 17 S L16  
 L18 0 S L17 AND ?LACTON? *← none related to lactonization*  
 L19 1 S 1994:86219/AN  
 SELECT RN L19 1

FILE 'REGISTRY' ENTERED AT 16:53:49 ON 10 OCT 2001

L20 3 S E1-3  
 L21 49788 S "CARBOXYMETHYL"  
 L22 10438 S "CELLULOSE" OR "DEXTRAN" OR "STARCH"  
 L23 839 S "PECTIN" OR "CHITOSAM"  
 L24 891 S L21 AND L22-23  
 L25 2 S L24 AND "LACTONE"

FILE 'HCAPLUS' ENTERED AT 16:58:02 ON 10 OCT 2001

L26 22827 S L24  
 L27 3 S L25  
 L28 3105 S L26 AND (?LACTON? OR ?ESTER?)  
 L29 26 S L26(L)?LACTON?  
 L30 8 S L29 AND (HEAT? OR ?THERMAL?)  
 L31 0 S L29 AND (XYLENE OR TOLUENE OR DIGLYME OR ACETONITRILE)  
 L32 52 S L28 AND (XYLENE OR TOLUENE OR DIGLYME OR ACETONITRILE)  
 L33 699 S L28 AND (DEHYDRAT? OR HEAT? OR TEMPERATURE OR ?THERMAL?)  
 L34 13 S L32 AND L33  
 L35 8 S L30 AND ?LACTON?  
 SELECT RN L35 1-8

FILE 'REGISTRY' ENTERED AT 17:07:09 ON 10 OCT 2001

L36 51 S E4-54

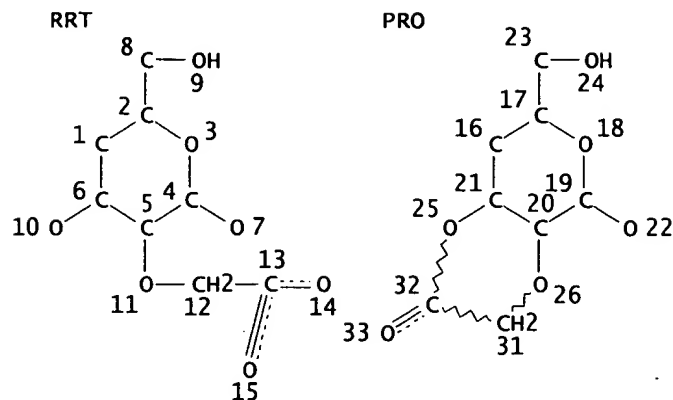
FILE 'HCAPLUS' ENTERED AT 17:07:21 ON 10 OCT 2001

L37 8 S L35 AND L36 *8 cites w/ 51 compounds displayed*  
 L38 10 S L27 OR L30  
 L39 2 S L38 NOT L37 *2 cites*

=> d que 116  
 'LL6' IS NOT VALID HERE  
 For an explanation, enter "HELP DISPLAY QUERY".

=> d que 16

L1 STR



NODE ATTRIBUTES:  
 CONNECT IS E1 RC AT 10  
 CONNECT IS E1 RC AT 14  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 29

STEREO ATTRIBUTES: NONE

\*\*\*\*MAPPINGS\*\*\*\*

NOD	SYM	ROL	NOD	SYM	ROL
13	C	RRT	32	C	PRO
15	O	RRT	33	O	PRO
32	C	PRO	13	C	RRT
33	O	PRO	15	O	RRT

L4 4294 SEA FILE=CASREACT ABB=ON PLU=ON LACTONE/FG.FORM (L) CARBOXYLI  
 C/FG.RXN  
 L6 0 SEA FILE=CASREACT SUB=L4 SSS FUL L1 ( 0 REACTIONS)

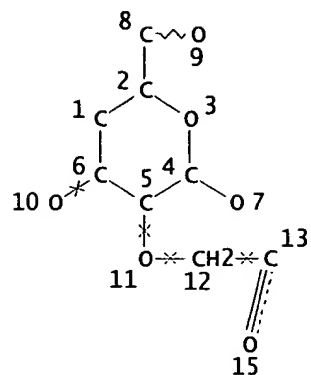
=> d que 126

L21	49788	SEA FILE=REGISTRY	ABB=ON	PLU=ON	"CARBOXYMETHYL"
L22	10438	SEA FILE=REGISTRY	ABB=ON	PLU=ON	"CELLULOSE" OR "DEXTRAN" OR
					"STARCH"
L23	839	SEA FILE=REGISTRY	ABB=ON	PLU=ON	"PECTIN" OR "CHITOSAM"
L24	891	SEA FILE=REGISTRY	ABB=ON	PLU=ON	L21 AND (L22 OR L23)
L26	22827	SEA FILE=HCAPLUS	ABB=ON	PLU=ON	L24

=> d que 117

L14

STR



NODE ATTRIBUTES:

CONNECT IS E1 RC AT 10

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE

L16 27 SEA FILE=REGISTRY SSS FUL L14

L17 17 SEA FILE=HCAPLUS ABB=ON PLU=ON L16

=&gt; d ibib abs hitstr 1

L37 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1986:90732 HCAPLUS

DOCUMENT NUMBER: 104:90732

TITLE: Preparation and study of carboxymethylcellulose derivatives. Reaction with ethylene glycol

AUTHOR(S): Larina, E. I.; Izmailova, P. A.; Petropavlovskii, G. A.

CORPORATE SOURCE: Inst. Vysokomol. Soedin., Leningrad, USSR

SOURCE: Khim. Drev. (1985), (5), 13-17

CODEN: KHDRDQ

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Ethylene glycol (I) [107-21-1] reacted with CMC Na salt [9004-32-4] in solid phase the presence of H<sub>3</sub>PO<sub>4</sub> and HCl to give CM-cellulose hydroxyethyl ester [9004-30-2]. The H<sub>3</sub>PO<sub>4</sub>, used as an esterification catalyst and for converting the Na salt of CMC into its H-form, reacted also with free OH groups of the CMC to give mixed esters [100438-78-6]. Other side reactions occurring in the system was lactonization of the H-CMC and crosslinking of the CMC with I.

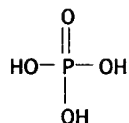
IT 7664-38-2, uses and miscellaneous

RL: CAT (Catalyst use); USES (Uses)

(catalysts, for esterification of CM-cellulose with ethylene glycol)

RN 7664-38-2 HCAPLUS

CN Phosphoric acid (7CI, 8CI, 9CI) (CA INDEX NAME)



IT 9004-32-4

RL: RCT (Reactant)

(esterification of, with ethylene glycol, in presence of phosphoric acid)

RN 9004-32-4 HCAPLUS

CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6

CMF Unspecified

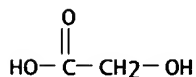
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 79-14-1

CMF C2 H4 O3



IT 100438-78-6P

RL: FORM (Formation, nonpreparative); PREP (Preparation)

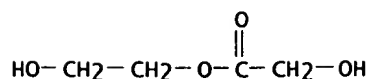
(formation of, during esterification with ethylene glycol)

RN 100438-78-6 HCAPLUS

CN Cellulose, phosphate, carboxymethyl 2-(2-hydroxyethoxy)-2-oxoethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 14396-72-6  
CMF C4 H8 O4



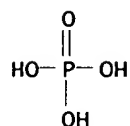
CM 2

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

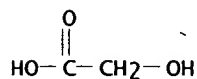
CM 3

CRN 7664-38-2  
CMF H3 O4 P



CM 4

CRN 79-14-1  
CMF C2 H4 O3



IT 9000-11-7DP, lactone derivs. 9004-32-4DP,  
lactone derivs.  
RL: FORM (Formation, nonpreparative); PREP (Preparation)  
(formation of, during esterification with ethylene glycol in presence  
of phosphoric acid)  
RN 9000-11-7 HCAPLUS  
CN Cellulose, carboxymethyl ether (8CI, 9CI) (CA INDEX NAME)

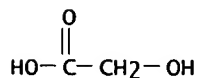
CM 1

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

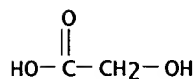
CRN 79-14-1  
CMF C2 H4 O3



RN 9004-32-4 HCAPLUS  
 CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)  
 CM 1  
 CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

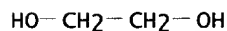
CM 2  
 CRN 79-14-1  
 CMF C2 H4 O3



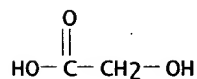
IT 9004-30-2P  
 RL: PREP (Preparation)  
 (prepn. of, side reactions in)  
 RN 9004-30-2 HCAPLUS  
 CN Cellulose, carboxymethyl 2-hydroxyethyl ether (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

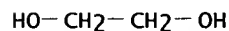
CM 2  
 CRN 107-21-1  
 CMF C2 H6 O2



CM 3  
 CRN 79-14-1  
 CMF C2 H4 O3



IT 107-21-1, reactions  
 RL: RCT (Reactant)  
 (reaction of, with CM-cellulose Na salt)  
 RN 107-21-1 HCAPLUS  
 CN 1,2-Ethanediol (9CI) (CA INDEX NAME)

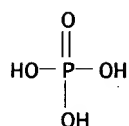


MAIER 09/493,891



=&gt; d ibib abs hitstr 2

L37 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1984:573290 HCAPLUS  
 DOCUMENT NUMBER: 101:173290  
 TITLE: Reactions of carboxymethyl cellulose with aliphatic diamines  
 AUTHOR(S): Petropavlovskii, G. A.; Larina, E. I.; Borisova, T. I.  
 CORPORATE SOURCE: Inst. Vysokomol. Soedin., Leningrad, USSR  
 SOURCE: Cellul. Chem. Technol. (1984), 18(3), 283-92  
 CODEN: CECTAH; ISSN: 0576-9787  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 AB The reaction of CM-cellulose (I) [9004-32-4] with aliph. amines in the presence of H<sub>3</sub>PO<sub>4</sub> (pH 2.8-5.5) gave crosslinked salts, which on heating to 160.degree., gave amides and lactones. The formation of amides and lactones were 1st-order reactions, but the formation rate of lactones was faster by an order of magnitude than that of amides. In the presence of H<sub>3</sub>PO<sub>4</sub>, aliph. diamines reacted with I to give P-contg. compds. insol. in both H<sub>2</sub>O and NaOH.  
 IT 7664-38-2, uses and miscellaneous  
 RL: USES (Uses)  
 (in reactions of CM-cellulose with aliph. amines)  
 RN 7664-38-2 HCAPLUS  
 CN Phosphoric acid (7CI, 8CI, 9CI) (CA INDEX NAME)



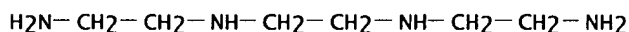
IT 107-15-3, reactions 111-40-0 112-24-3  
 112-57-2  
 RL: RCT (Reactant)  
 (reaction of, with CM-cellulose, kinetics and mechanism of)  
 RN 107-15-3 HCAPLUS  
 CN 1,2-Ethanediamine (9CI) (CA INDEX NAME)



RN 111-40-0 HCAPLUS  
 CN 1,2-Ethanediamine, N-(2-aminoethyl)- (9CI) (CA INDEX NAME)



RN 112-24-3 HCAPLUS  
 CN 1,2-Ethanediamine, N,N'-bis(2-aminoethyl)- (9CI) (CA INDEX NAME)



RN 112-57-2 HCAPLUS  
 CN 1,2-Ethanediamine, N-(2-aminoethyl)-N'-[2-[(2-aminoethyl)amino]ethyl]- (9CI) (CA INDEX NAME)



IT 9004-32-4  
 RL: RCT (Reactant)

MAIER 09/493,891

(reaction of, with aliph. diamines, kinetics and mechanism of)

RN 9004-32-4 HCAPLUS

CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6

CMF Unspecified

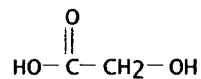
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 79-14-1

CMF C2 H4 O3



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L37 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1976:423015 HCAPLUS  
 DOCUMENT NUMBER: 85:23015  
 TITLE: Encapsulation  
 INVENTOR(S): Hayashi, Takao; Matsukawa, Hiroharu; Saeki, Keiso  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Japan. Kokai, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 51010181	A2	19760127	JP 1974-81363	19740715
JP 58025498	B4	19830527		

AB Gelatins and carboxymethyl starch (I) [9057-06-1] having degree of etherification 0.2-1, starch sulfate [11097-99-7], or starch phosphate [11120-02-8] were used to form the wall of capsules by coacervation. Thus, 40 parts water contg. 6 parts H2SO4-treated gelatin and 2 parts I at 45.degree. was mixed with 0.5 part Turkey red oil (emulsifier) and 50 parts hydrogenated terphenyl [26140-60-3] contg. 2% Crystal violet lactone to form an emulsion, dild. with 150 parts water (45.degree.), mixed with 50% ACOH to pH 4, stirred for 15 min, cooled, mixed with 3 parts 37% aq. HCHO at 15.degree., cooled to 10.degree., mixed with 10% aq. NaOH to pH 10 during 1 day, and heated to 50.degree. during 20 min to prep. capsules.

IT 9057-06-1 11097-99-7 11120-02-8  
 RL: USES (Uses)  
 (encapsulation by gelatins and, of oils)

RN 9057-06-1 HCAPLUS  
 CN Starch, carboxymethyl ether (9CI) (CA INDEX NAME)

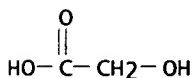
CM 1

CRN 9005-25-8  
 CMF Unspecified  
 CCI MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 79-14-1  
 CMF C2 H4 O3



RN 11097-99-7 HCAPLUS  
 CN Starch, hydrogen sulfate (9CI) (CA INDEX NAME)

CM 1

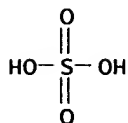
CRN 9005-25-8  
 CMF Unspecified  
 CCI MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 7664-93-9

CMF H2 O4 S



RN 11120-02-8 HCAPLUS  
CN Starch, phosphate (9CI) (CA INDEX NAME)

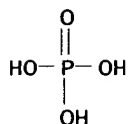
CM 1

CRN 9005-25-8  
CMF Unspecified  
CCI MAN

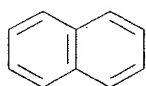
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 7664-38-2  
CMF H3 O4 P



IT 29253-36-9  
RL: PROC (Process)  
(encapsulation of, with gelatins and carboxymethyl starch)  
RN 29253-36-9 HCAPLUS  
CN Naphthalene, (1-methylethyl)- (9CI) (CA INDEX NAME)



D1-Pr-i

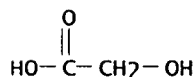
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L37 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1976:181814 HCAPLUS  
 DOCUMENT NUMBER: 84:181814  
 TITLE: Encapsulation  
 INVENTOR(S): Hayashi, Takao; Matsukawa, Hiroharu  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Japan. Kokai, 9 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 51014179	A2	19760204	JP 1974-86199	19740726
AB	Gelatin (100 parts) and 15-60 parts CM cellulose (I) [9004-32-4], cellulose phosphate [9015-14-9], or a similar compd. were used to form walls of capsules by complex coacervation. Thus, 6 parts H2SO4-treated gelatin and 2.2 parts I were dissolved in 40 parts water at 40.degree., mixed with 0.5 part Turkey red oil (an emulsifier) and 50 parts hydrogenated terphenyl [26140-60-3] contg. 2% Crystal violet lactone to give an emulsion, dild. with 140 parts water (45.degree.), mixed with 50% ACOH to pH 4.4, stirred for an addnl. 15 min, cooled, mixed with 3 parts 37% HCHO at 15.degree. and 10% aq. NaOH at 10.degree. to pH 10, and heated to 50.degree. during 20 min to prep. capsules.				
IT	9004-32-4	9015-14-9	9032-43-3	RL: USES (Uses) (encapsulation with gelatin and, of oils)	
RN	9004-32-4	HCAPLUS			
CN	Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)				
	CM	1			
	CRN	9004-34-6			
	CMF	Unspecified			
	CCI	PMS, MAN			

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

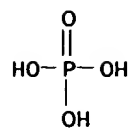
CM 2  
 CRN 79-14-1  
 CMF C2 H4 O3



RN 9015-14-9 HCAPLUS  
 CN Cellulose, dihydrogen phosphate (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2  
 CRN 7664-38-2  
 CMF H3 O4 P



RN 9032-43-3 HCAPLUS  
CN Cellulose, hydrogen sulfate (9CI) (CA INDEX NAME)

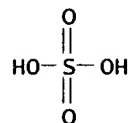
CM 1

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 7664-93-9  
CMF H2 O4 S



=&gt; d ibib abs hitstr 5

L37 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1976:60585 HCAPLUS

DOCUMENT NUMBER: 84:60585

TITLE: Cellulose esters or ethers blended with cyclic ester polymers

INVENTOR(S): Koleske, Joseph V.; Whitworth, Clyde J., Jr.; Lundberg, Robert D.

PATENT ASSIGNEE(S): Union Carbide Corp., USA

SOURCE: U.S., 20 pp. Division of U.S. 3,781,381.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 4

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3922239	A	19751125	US 1973-405528	19731011
US 3781381	A	19731225	US 1971-140951	19710506
PRIORITY APPLN. INFO.:			US 1969-812314	19690401
			US 1971-140951	19710506

AB The addn. of poly(epsilon.-caprolactone) (I) [24980-41-4] to cellulose derivs., polyethers, polyamides, polysulfones, polycarbonates, or polyurethanes, resulted in uniform blends with greater flexibility and processability than the polymers not contg. I. A bisphenol A-epichlorohydrin polymer [25068-38-6] contg. 10% I was more flexible with heat distortion temp. 66.degree. and was a tougher material than the polyether not contg. I which had a heat distortion temp. 87.degree..

IT 52284-06-7

RL: USES (Uses)

(block, plasticizers for, caprolactone polyester as)

RN 52284-06-7 HCAPLUS

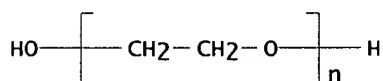
CN 2-Oxepanone, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 25322-68-3

CMF (C2 H4 O)n H2 O

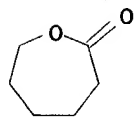
CCI PMS



CM 2

CRN 502-44-3

CMF C6 H10 O2



IT 9056-55-7

RL: USES (Uses)

(block, plasticizers for, caprolactone polyester as)

RN 9056-55-7 HCAPLUS

CN 2-Oxepanone, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1,2-

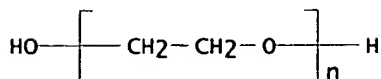
ethanediyl) and 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane] (9CI) (CA INDEX NAME)

CM 1

CRN 25322-68-3

CMF (C2 H4 O)n H2 O

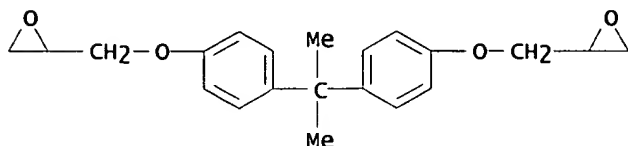
CCI PMS



CM 2

CRN 1675-54-3

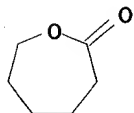
CMF C21 H24 O4



CM 3

CRN 502-44-3

CMF C6 H10 O2



IT 9004-32-4 9004-36-8 9011-16-9  
 9012-09-3 9035-69-2 9056-00-2  
 24936-68-3 24969-06-0 24969-10-6  
 24969-25-3 25038-54-4 25068-38-6  
 25135-51-7 25154-01-2 25322-68-3  
 25971-63-5 26917-50-0 51553-97-0

RL: USES (uses)

(plasticizers for, caprolactone polyesters as)

RN 9004-32-4 HCAPLUS

CN cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

CM 1

CRN 9004-34-6

CMF Unspecified

CCI PMS, MAN

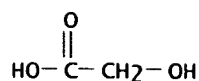
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 79-14-1

CMF C2 H4 O3





RN 9004-36-8 HCAPLUS  
CN Cellulose, acetate butanoate (9CI) (CA INDEX NAME)

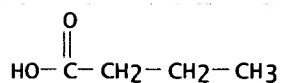
CM 1

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

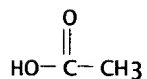
CM 2

CRN 107-92-6  
CMF C4 H8 O2



CM 3

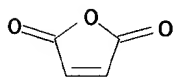
CRN 64-19-7  
CMF C2 H4 O2



RN 9011-16-9 HCAPLUS  
CN 2,5-Furandione, polymer with methoxyethene (9CI) (CA INDEX NAME)

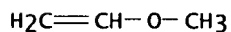
CM 1

CRN 108-31-6  
CMF C4 H2 O3



CM 2

CRN 107-25-5  
CMF C3 H6 O



RN 9012-09-3 HCAPLUS  
CN Cellulose, triacetate (8CI, 9CI) (CA INDEX NAME)

CM 1

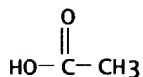
CRN 9004-34-6

CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 64-19-7  
CMF C2 H4 O2



RN 9035-69-2 HCAPLUS  
CN Cellulose, diacetate (9CI) (CA INDEX NAME)

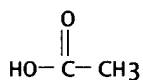
CM 1

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 64-19-7  
CMF C2 H4 O2



RN 9056-00-2 HCAPLUS  
CN Cellulose, tridecanoate (9CI) (CA INDEX NAME)

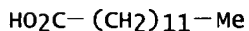
CM 1

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

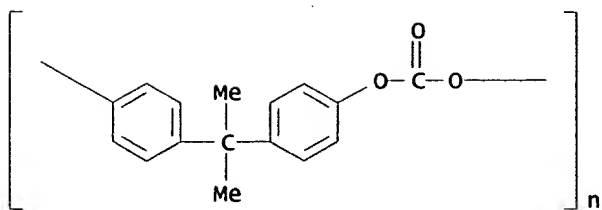
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 638-53-9  
CMF C13 H26 O2



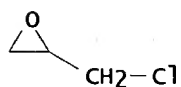
RN 24936-68-3 HCAPLUS  
CN Poly[oxycarbonyloxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI)  
(CA INDEX NAME)



RN 24969-06-0 HCAPLUS  
CN Oxirane, (chloromethyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

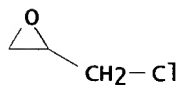
CRN 106-89-8  
CMF C3 H5 Cl O



RN 24969-10-6 HCAPLUS  
CN Oxirane, (chloromethyl)-, polymer with oxirane (9CI) (CA INDEX NAME)

CM 1

CRN 106-89-8  
CMF C3 H5 Cl O



CM 2

CRN 75-21-8  
CMF C2 H4 O



RN 24969-25-3 HCAPLUS  
CN 1,3,5-Trioxane, polymer with oxirane (9CI) (CA INDEX NAME)

CM 1

CRN 110-88-3  
CMF C3 H6 O3

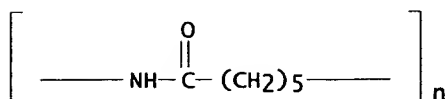


CM 2

CRN 75-21-8  
CMF C2 H4 O



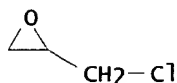
RN 25038-54-4 HCAPLUS  
CN Poly[imino(1-oxo-1,6-hexanediyl)] (9CI) (CA INDEX NAME)



RN 25068-38-6 HCAPLUS  
CN Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane (9CI) (CA INDEX NAME)

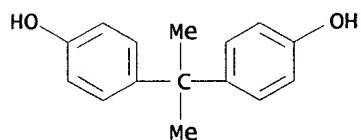
CM 1

CRN 106-89-8  
CMF C3 H5 Cl O

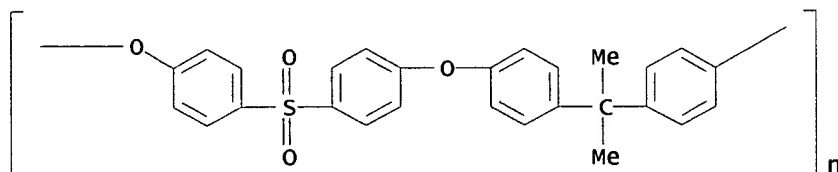


CM 2

CRN 80-05-7  
CMF C15 H16 O2



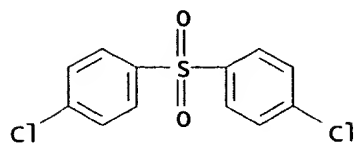
RN 25135-51-7 HCAPLUS  
CN Poly[oxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 25154-01-2 HCAPLUS  
CN Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 1,1'-sulfonylbis[4-chlorobenzene] (9CI) (CA INDEX NAME)

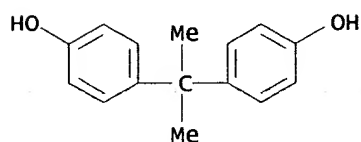
CM 1

CRN 80-07-9  
CMF C12 H8 Cl2 O2 S

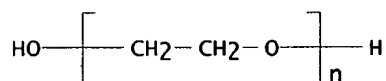


CM 2

CRN 80-05-7  
CMF C15 H16 O2



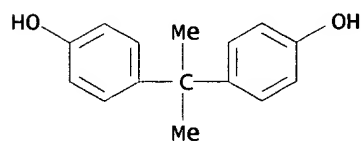
RN 25322-68-3 HCAPLUS  
CN Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy- (9CI) (CA INDEX NAME)



RN 25971-63-5 HCAPLUS  
CN Carbonic dichloride, polymer with 4,4'-(1-methylethylidene)bis[phenol] (9CI) (CA INDEX NAME)

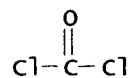
CM 1

CRN 80-05-7  
CMF C15 H16 O2

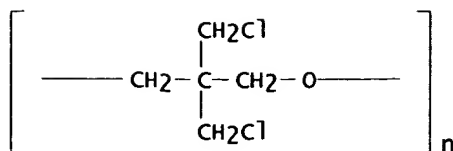


CM 2

CRN 75-44-5  
CMF C Cl2 O



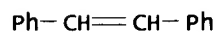
RN 26917-50-0 HCAPLUS  
CN Poly[oxy[2,2-bis(chloromethyl)-1,3-propanediyl]] (9CI) (CA INDEX NAME)



RN 51553-97-0 HCAPLUS  
CN 2-Propenenitrile, polymer with 1,1'-(1,2-ethenediyl)bis[benzene] (9CI)  
(CA INDEX NAME)

CM 1

CRN 588-59-0  
CMF C14 H12



CM 2

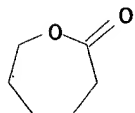
CRN 107-13-1  
CMF C3 H3 N



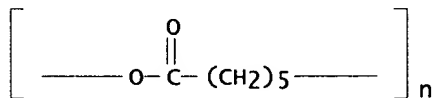
IT 24980-41-4 25248-42-4  
RL: MOA (Modifier or additive use); USES (Uses)  
(plasticizers, for cellulosic derivs. and thermoplastics)  
RN 24980-41-4 HCAPLUS  
CN 2-Oxepanone, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 502-44-3  
CMF C6 H10 O2



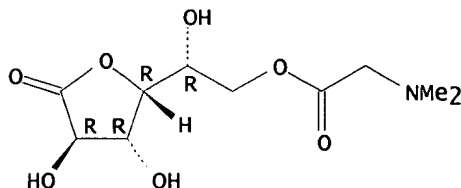
RN 25248-42-4 HCAPLUS  
CN Poly[oxy(1-oxo-1,6-hexanediyl)] (9CI) (CA INDEX NAME)



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L37 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1975:579446 HCAPLUS  
 DOCUMENT NUMBER: 83:179446  
 TITLE: Synthesis of 6-O-dimethylglycyl-D-glucono-1,4-lactone (pangamolactone) and its salts  
 AUTHOR(S): Murase, Kiyoshi; Murakami, Masuo  
 CORPORATE SOURCE: Kawanouchi Cent. Res. Lab., Tokyo, Japan  
 SOURCE: Yamanouchi Seiyaku Kenkyu Hokoku (1974), 2, 62-5  
 CODEN: YSKHDO  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese  
 GI For diagram(s), see printed CA Issue.  
 AB D-glucono-1,4-lactone 3,5-phenylborate (I, R = H), prepd. by heating D-glucono-1,4-lactone with triphenylboroxal in methylcellosolve, was condensed with Me<sub>2</sub>NCH<sub>2</sub>CO<sub>2</sub>H·HCl to give I R = COCH<sub>2</sub>NMe<sub>2</sub>.cndot.HCl, which was treated with (HOCH<sub>2</sub>)<sub>2</sub>CH<sub>2</sub> to give pangamolactone (II). II cellulose acetate phthalate and II carboxymethylcellulose were also prepd.  
 IT 16820-88-5P 29031-21-8P 29031-22-9P  
 57074-71-2P 57074-72-3P 57328-12-8P  
 57372-71-1P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. of)  
 RN 16820-88-5 HCAPLUS  
 CN D-Gluconic acid, .gamma.-lactone, 6-ester with N,N-dimethylglycine, hydrochloride (9CI) (CA INDEX NAME)

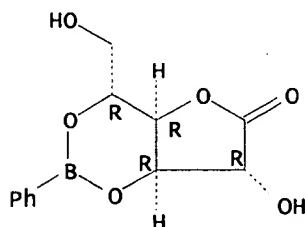
Absolute stereochemistry.



● HCl

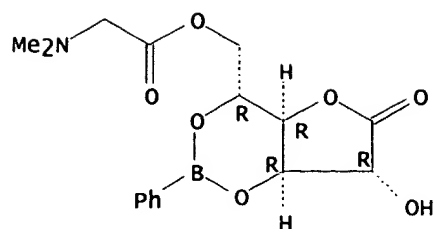
RN 29031-21-8 HCAPLUS  
 CN D-Gluconic acid, .gamma.-lactone, cyclic 3,5-(phenylboronate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 29031-22-9 HCAPLUS  
 CN D-Gluconic acid, .gamma.-lactone, cyclic 3,5-(phenylboronate), 6-ester with N,N-dimethylglycine, hydrochloride (9CI) (CA INDEX NAME)

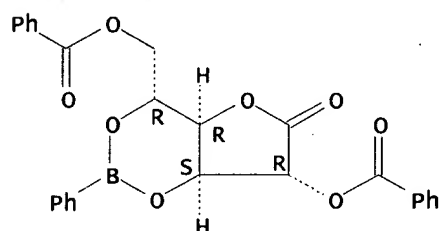
Absolute stereochemistry.



● HCl

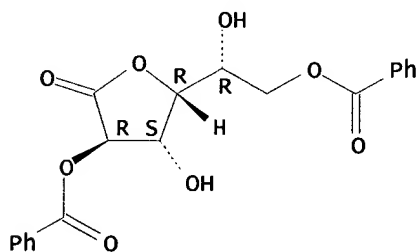
RN 57074-71-2 HCAPLUS  
CN D-Gluconic acid, .gamma.-lactone, cyclic 3,5-(phenylboronate)  
2,6-dibenzoate (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 57074-72-3 HCAPLUS  
CN D-Gluconic acid, .gamma.-lactone, 2,6-dibenzoate (9CI) (CA INDEX NAME)

Absolute stereochemistry.



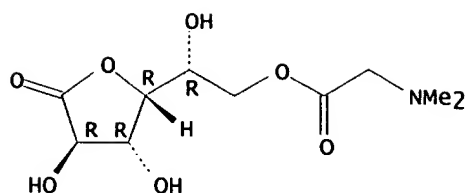
RN 57328-12-8 HCAPLUS  
CN D-Gluconic acid, .gamma.-lactone, 6-ester with N,N-dimethylglycine, compd.  
with cellulose carboxymethyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 34044-40-1  
CMF C10 H17 N O7  
CDES 5:D-GLUCO

Absolute stereochemistry.





CM 2

CRN 9000-11-7  
CMF C2 H4 O3 . x Unspecified  
CDES 8:GD,ETHER

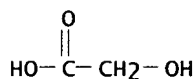
CM 3

CRN 9004-34-6  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 4

CRN 79-14-1  
CMF C2 H4 O3

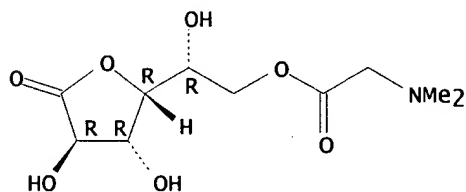


RN 57372-71-1 HCAPLUS  
CN D-Gluconic acid, .gamma.-lactone, 6-ester with N,N-dimethylglycine, compd.  
with cellulose acetate hydrogen 1,2-benzenedicarboxylate (9CI) (CA INDEX  
NAME)

CM 1

CRN 34044-40-1  
CMF C10 H17 N O7  
CDES 5:D-GLUCO

Absolute stereochemistry.



CM 2

CRN 9004-38-0  
CMF C8 H6 O4 . x C2 H4 O2 . x Unspecified  
CDES 8:GD1

CM 3

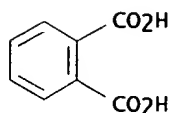
CRN 9004-34-6

CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

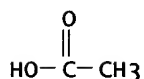
CM 4

CRN 88-99-3  
CMF C8 H6 O4



CM 5

CRN 64-19-7  
CMF C2 H4 O2



IT 504-63-2

RL: RCT (Reactant)

(reaction with (dimethylglycyl)gluconolactone phenylboronate)

RN 504-63-2 HCAPLUS

CN 1,3-Propanediol (8CI, 9CI) (CA INDEX NAME)



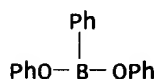
IT 2938-75-2

RL: RCT (Reactant)

(reaction with gluconolactone)

RN 2938-75-2 HCAPLUS

CN Boronic acid, phenyl-, diphenyl ester (9CI) (CA INDEX NAME)



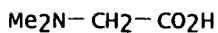
IT 2491-06-7

RL: RCT (Reactant)

(reaction with gluconolactone phenylboronate)

RN 2491-06-7 HCAPLUS

CN Glycine, N,N-dimethyl-, hydrochloride (6CI, 8CI, 9CI) (CA INDEX NAME)



● HCl

IT 9004-32-4 57285-68-4

RL: RCT (Reactant)

(reaction with pangamolactone)

RN 9004-32-4 HCAPLUS  
 CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

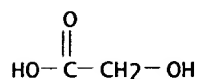
CM 1

CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 79-14-1  
 CMF C2 H4 O3



RN 57285-68-4 HCAPLUS  
 CN Cellulose, acetate hydrogen 1,2-benzenedicarboxylate, lithium salt (9CI)  
 (CA INDEX NAME)

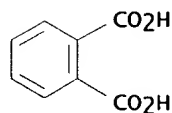
CM 1

CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

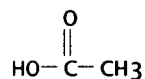
CM 2

CRN 88-99-3  
 CMF C8 H6 O4



CM 3

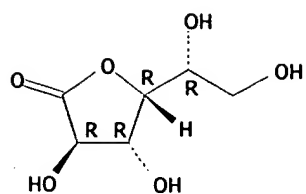
CRN 64-19-7  
 CMF C2 H4 O2



IT 1198-69-2  
 RL: RCT (Reactant)  
 (reaction with triphenylboroxal)  
 RN 1198-69-2 HCAPLUS  
 CN D-Gluconic acid, .gamma.-lactone (9CI) (CA INDEX NAME)

Absolute stereochemistry.

MAIER 09/493,891



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L37 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1975:444978 HCAPLUS  
 DOCUMENT NUMBER: 83:44978  
 TITLE: Generation of wet strength in paper sheets made of  
 fibrous carboxymethyl cellulose  
 AUTHOR(S): Yamamoto, Masataka; Noguchi, Hiroyuki; Kubota,  
 Hitoshi; Ogiwara, Yoshitaka  
 CORPORATE SOURCE: Mishima Pap. Manuf. Co., Ltd., Shizuoka, Japan  
 SOURCE: Kami Pa Gikyoshi (1975), 29(5), 247-53  
 CODEN: KAGIAU  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Japanese  
 AB The wet strength improvement of the title paper by natural aging and  
 heat treatment was studied by detg. ester and lactone  
 linkages formed. The ester and lactone linkage formation in  
 carboxymethyl cellulose [9000-11-7] increased with increasing  
 degree of substitution and the conversion of the carboxy group was  
 .ltoreq.10%, the linkages being intramol., intermol., and interfiber.  
 IT 9000-11-7  
 RL: USES (Uses)  
 (fiber, paper from, wet strength improvement in)  
 RN 9000-11-7 HCAPLUS  
 CN Cellulose, carboxymethyl ether (8CI, 9CI) (CA INDEX NAME)

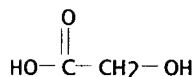
CM 1

CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 79-14-1  
 CMF C2 H4 O3

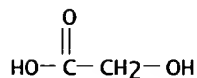


=&gt; d ibib abs hitstr 8

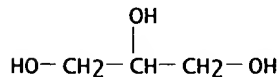
L37 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1974:493256 HCAPLUS  
 DOCUMENT NUMBER: 81:93256  
 TITLE: Interaction of acid CM-cellulose with hydroxyls of  
 alcohols during its lactonization  
 AUTHOR(S): Petropavolovskii, G. A.; Vasil'eva, G. G.; Yur'eva, M.  
 K.  
 CORPORATE SOURCE: USSR  
 SOURCE: Zh. Prikl. Khim. (Leningrad) (1974), 47(5), 1106-12  
 CODEN: ZPKHAB  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 AB The ir spectra of acid CM-cellulose (I) [9000-11-7], which had  
 been heated in ethanol [64-17-5] or glycerol [56-81-5] at 105.deg., confirmed that the carboxyl groups of I  
 reacted with the OH groups of I to form lactones, or with the OH  
 groups of other alcs. to form esters.  
 IT 9000-11-7  
 RL: RCT (Reactant)  
 (lactonization of, in presence of alcs.)  
 RN 9000-11-7 HCAPLUS  
 CN Cellulose, carboxymethyl ether (8CI, 9CI) (CA INDEX NAME)  
 CM 1  
 CRN 9004-34-6  
 CMF Unspecified  
 CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

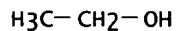
CM 2  
 CRN 79-14-1  
 CMF C2 H4 O3



IT 56-81-5, reactions 64-17-5, reactions  
 RL: RCT (Reactant)  
 (with carboxymethyl cellulose, lactone formation in)  
 RN 56-81-5 HCAPLUS  
 CN 1,2,3-Propanetriol (9CI) (CA INDEX NAME)



RN 64-17-5 HCAPLUS  
 CN Ethanol (9CI) (CA INDEX NAME)



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L39 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1995:263860 HCAPLUS

DOCUMENT NUMBER: 122:58642

TITLE: Dextran stability in chemical reactions and characteristics of recovery of target products

AUTHOR(S): Iozep, A. A.; Il'ina, T. Yu.; Kuznetsova, T. E.; Passet, B. V.

CORPORATE SOURCE: St. Peterburg. Khim.-Farm. Inst., St. Petersburg, Russia

SOURCE: Zh. Prikl. Khim. (S.-Peterburg) (1994), 67(6), 1012-16  
CODEN: ZPKHAB; ISSN: 0044-4618

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Gel-chromatog. study showed that synthesis of amide derivs. of carboxymethyl dextran (I) was not accompanied by significant degrdn. of I. Depolymn. of I was, however, obsd. during esterification of I in prepn. of Et and pentyl esters. Prepn. of dextran sulfate using formamide-SO<sub>2</sub> did not result in depolymn. of dextran, however sulfation of dextran by SO<sub>3</sub> caused depolymn. of dextran. Ultrafiltration was used with good results for purifn. and fractionation of dextran derivs. Optimum ultrafiltration conditions using cellulose acetate membranes were found.

IT 152287-12-2P

RL: PUR (Purification or recovery); SPN (Synthetic preparation); PREP (Preparation)

(dextran stability in prepn. of and purifn. of)

RN 152287-12-2 HCAPLUS

CN Dextran, 2-(carboxymethyl) ether, .delta.-lactone (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

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L39 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2001 ACS

CC 44-6 (Industrial Carbohydrates)

Section cross-reference(s): 33

ST carboxymethyl dextran deriv prepn purifn; ester carboxymethyl dextran prepn purifn; sulfate dextran prepn purifn; amide carboxymethyl dextran deriv prepn purifn; ultrafiltration purifn dextran deriv

IT Esterification

(dextran and carboxymethyl dextran stability in)

IT Filtration

(ultra-, of dextran and carboxymethyl dextran derivs.)

IT 100-46-9DP, Benzylamine, carboxymethyl dextran derivs. 9042-14-2P, Dextran sulfate 9044-05-7DP, Carboxymethyl dextran, benzylamine derivs. 152287-12-2P 154452-55-8P; Carboxymethyl dextran ethyl ester 160338-51-2P, Carboxymethyl dextran pentyl ester

RL: PUR (Purification or recovery); SPN (Synthetic preparation); PREP (Preparation)

(dextran stability in prepn. of and purifn. of)

IT 9004-35-7, Cellulose acetate

RL: TEM (Technical or engineered material use); USES (Uses)

(membranes; for purifn. of dextran and carboxymethyl dextran derivs.)

=&gt; d ibib abs hitstr 2

L39 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2001 ACS  
 ACCESSION NUMBER: 1994:86219 HCAPLUS  
 DOCUMENT NUMBER: 120:86219  
 TITLE: Carboxymethyl dextran lactone: A preactivated polymer for amine conjugations  
 AUTHOR(S): Heindel, Ned D.; Kauffman, Michael A.; Akyea, Eric K.; Engel, Stephanie A.; Frey, Michael F.; Lacey, C. Jeffrey; Egolf, Roger A.  
 CORPORATE SOURCE: Inst. Health Sci., Lehigh Univ., Bethlehem, PA, 18015, USA  
 SOURCE: Bioconjugate Chem. (1994), 5(1), 98-100  
 CODEN: BCCHE; ISSN: 1043-1802  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB The linking of amino haptens to carboxymethyl dextran (CMD) requires carboxyl activation, for example, via carbodiimides. The authors have discovered that substantial N-acylurea, derived from these carbodiimides, can be trapped on the CMD backbone. As an alternative, CMD can be conveniently lactonized by heating in inert solvents, and this carboxymethyl dextran lactone (CDL) can be employed directly for amine conjugation.

IT 152287-12-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

RN 152287-12-2 HCAPLUS  
 CN Dextran, 2-(carboxymethyl) ether, .delta.-lactone (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IT 152287-12-2DP, methoxybenzylamine derivs.  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of, as drug carrier)

RN 152287-12-2 HCAPLUS  
 CN Dextran, 2-(carboxymethyl) ether, .delta.-lactone (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

=&gt; d ind 2

L39 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2001 ACS  
 CC 63-5 (Pharmaceuticals)  
 Section cross-reference(s): 33  
 ST carboxymethyl dextran lactone amine conjugate prepn; drug targeting  
 carboxymethyl dextran lactone

IT Amines, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (carboxamidoalkyl, dextrans-contg., prepn. of as drug carriers)

IT Pharmaceutical dosage forms  
 (carriers, carboxymethyl dextran lactone as preactivated polymer for amine conjugation in)

IT 9044-05-7DP, Carboxymethyl dextran, methoxybenzylamine derivs.  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and amine conjugation of, as drug carrier)

IT 152287-12-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

IT 152287-12-2DP, methoxybenzylamine derivs.  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of, as drug carrier)

IT 2393-23-9DP, 4-Methoxybenzylamine, reaction products with carboxymethyl dextrans  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of, as drug carriers)